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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,338	09/18/2000	Erich Hell	P00,1732	3969

7590

11/15/2002

Schiff Hardin & Waite  
Atten Patent Department  
6600 Sears Tower  
Chicago, IL 60606-6473

EXAMINER

KAO, CHIH CHENG G

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 11/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/664,338

Applicant(s)

HELL ET AL.

Examiner

Chih-Cheng Glen Kao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3,4,6-8,10-17 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3,4,6-8,10-15,17 and 20 is/are rejected.
- 7) ☒ Claim(s) 4,7,16,19 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Objections*

1. Claim 4 is objected to because of the following informalities. Claim 4 recites the limitation "said heat exchanger" in line 1. There is insufficient antecedent basis for this limitation in the claim. It is unknown what heat exchanger is referred to in claim 8. For purposes of examination, the Examiner will refer to any heat exchanger. Appropriate correction is required.
2. Claim 7 is objected to because of the following informalities. Claim 7 recites the limitation "said heat exchanger" in lines 1, 3, and 4. There is insufficient antecedent basis for this limitation in the claim. It is unknown what heat exchanger is referred to in claim 8. For purposes of examination, the Examiner will refer to any heat exchanger. Appropriate correction is required.
3. Claim 19 is objected to because of the following informalities. Claim 19 depends from itself. This objection may be obviated by changing the dependency of claim 19 from claim 19 to claim 17. For purposes of examination, the claim has been treated as such. Appropriate correction is required.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 4, 6, 8, 10-15, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (US patent 5313512) in view of Kroener (US patent 4866743).

Tanaka discloses a computed tomography arrangement having an x-ray source (Fig. 7, #1) which is rotatable around a rotational axis (col. 4, lines 30-32) and a detector mounted opposite each other (Fig. 7, "D"), the improvement of a cooling arrangement for said x-ray source comprising a first ring-like heat exchanger (Fig. 6 and 7) having at least two heat exchange elements (Fig. 6, #2a and 2b) with a flow path (Fig. 6, #3) and flowing medium (col. 4, lines 25-29), with at least one of said heat exchange elements being connected with said x-ray source (Fig. 6, #2a to 1), wherein said heat exchanger is rotatable around said rotational axis (col. 4, lines 32-33), further comprising a covering proceeding circumferentially around said rotational axis and disposed between said at least two heat exchange elements (Fig. 6 and 7, #3).

However, Tanaka does not disclose a gantry and a second annularly exterior ring-like heat exchanger with at least two heat exchange elements and a flow path with medium for transferring heat from a first heat exchanger, said second heat exchanger being stationary relative to said first heat exchanger, wherein said second heat exchanger is disposed axially offset, along said rotational axis from said first heat exchanger, further comprising a covering proceeding

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circumferentially around said rotational axis and disposed between said at least two heat exchange elements of said second heat exchanger.

Kroener teaches a gantry (Fig 1, #3), a second annularly (Fig. 1, #9 and 27) exterior ring-like heat exchanger with at least two heat exchange elements (Fig. 1, #27) and a flow path with medium for transferring heat from a first heat exchanger (col. 4, lines 8-11), said second heat exchanger being stationary relative to said first heat exchanger (Fig. 1, #24 and 25 connected to #2), wherein said second heat exchanger is disposed axially offset, along said rotational axis from said first heat exchanger and is attached to first heat exchanger (Fig. 1, #9 and 27), further comprising a covering proceeding circumferentially around said rotational axis and disposed between said at least two heat exchange elements of said second heat exchanger (Fig. 1, #29),

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the second ring-like heat exchanger components and gantry of Kroener with the device of Tanaka, since one would be motivated to have a gantry to mount the source, detector and heat exchangers onto while rotating these objects around the subject as shown by Kroener (Fig. 1). Secondly, one would be motivated to have a second ring-like heat exchanger components to intensify the cooling effect as shown by Kroener (col. 2, lines 26-35).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Kroener as applied to claim 1 above, and further in view of Deucher et al. (US patent 5610968). Tanaka et al. in view of Kroener suggests a device as recited above.

However, Tanaka does not seem to specifically disclose a plurality of annular guide devices disposed at a heat exchanger and conducting an airstream, generated by rotation of said heat exchanger and heated, away from said gantry toward an exterior of said gantry.

Deucher et al. teaches a plurality of annular guide devices (Fig. 4, slits above #54) disposed at a heat exchanger and conducting an airstream, generated by rotation of said heat exchanger and heated at the first and second heat exchangers (col. 5, lines 8-13, and Figures 2-4), away from said gantry toward an exterior of said gantry (Fig. 4, #56).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made to have the annular guide devices of Deucher et al. with the device of Tanaka in view of Kroener, since one would be motivated to remove excess heat as shown by Deucher et al. (col. 5, lines 8-13) to remove waste heat (col. 1, lines 25-26).

#### *Allowable Subject Matter*

6. Claims 16, 19, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and all intervening claims.

The following is a statement of reasons for the indication of allowable subject matter.

Regarding claims 16, 19, and 21, prior art does not disclose or fairly suggest a plurality of inter-engaging annular guide devices for guiding an airstream from the first to second heat exchanger incorporated with all the limitations of each respective claim, all respective intervening claims, and respective base claims.

*Response to Arguments*

7. The objection to claim 3 has been withdrawn in light of the amendment filed 9/3/02.
8. Applicant's arguments filed 9/3/02 have been fully considered but they are not persuasive.

The Examiner notes that Kroener does not show the following statement made in the arguments of the applicant, "The conduit 16 has a coolant flowing there, and transfers heat generated by the x-ray source to the heat exchanger 9." Kroener shows that closed circulation loop 7, transfers heat generated by the x-ray source to the heat exchanger 9 (col. 3, lines 30-34). In addition, Figure 3 does show the annular, stationary heat exchanger.

*Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - Th (8 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



gk  
November 7, 2002



ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2000